

25. Some new Parasitic Nematodes from Tropical Africa.

By ROBERT T. LEIPER, D.Sc., M.B., F.Z.S.

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(Text-figures 140-144.)

In the following paper I give a brief description of a number of new genera that have recently come under my notice in the course of an examination of helminthic material collected by me during a visit to East Africa, Uganda and the Soudan, whilst a member of the Egyptian Government Survey in 1907, and of further material sent to me at the London School of Tropical Medicine by members of the Colonial Medical Service.

NEMATODA.

Family ANCYLOSTOMIDÆ.

Genus ACHELLOSTOMA, gen. n.

Species SIMPSONI, sp. n. (Type sp.)

Host: a large rodent. Locality: Nigeria.

A large number of specimens was collected from the alimentary canal and preserved in 70 % alcohol. The males measure 17 mm. in length, the females 23 mm. in length. The former are less numerous than the latter. The cuticle shows marked transverse striation in the anterior end of the body. The individual striæ are so deeply cut as to give the edge of the cuticle in this region a serrated appearance. At a distance of 0·8 mm. from the anterior end are two large stout lateral papillæ curving backwards and shaped like large thorns (text-fig. 140, A, *l.p.* p. 550). The anterior end of the body is bent dorsally only very slightly, showing that the oral aperture, which is surrounded by a thick collar, 0·004 mm. deep, is almost but not quite terminal. The mouth capsule shows similar characters to those found in other members of this family. There is a large median ventral tooth and two fan-shaped inner teeth guarding the œsophageal entrance to the buccal capsule dorsally (text-fig. 140, D). The buccal capsule has a chitinous wall, and resembles that of *Necator* rather than that of *Ancylostomum*. The most striking feature of the genus, however, is the entire absence of teeth or cutting-plates guarding the entrance to the oral aperture. There is no indication either of a corona radiata; so that although the buccal cavity of the parasite recalls that of the Ancylostomes in its internal characters, the oral aperture reminds one rather of the Bunostomes.

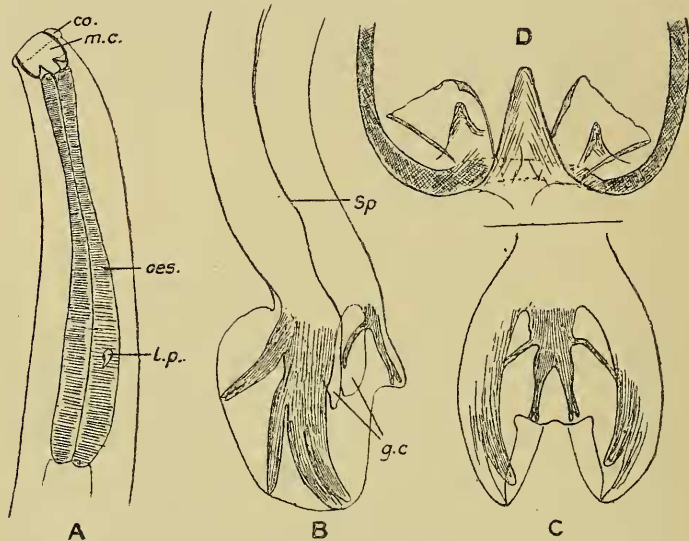
The œsophagus measures 0·95 mm. in length and shows no special characters. In the female the genital pore lies almost at the centre of the body. The eggs in the uterus measure 0·055 mm. $\times$ 0·032 mm. and usually contain a few segments.

In the male, the posterior end of the body is surrounded by a

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well developed bursa that projects much more ventrally than dorsally (text-fig. 140, B). The genital cone (text-fig. 140, B, *g.c.*) is greatly developed and can be seen projecting between the two sides of the bursa and the dorsal membrane. The dorsal membrane is distinctly delimited from the lateral halves of the bursa and is very much shorter (text-fig. 140, C).

Text-fig. 140.



Acheilostoma simpsoni.

- A. Anterior extremity showing mouth capsule *m.c.*, oesophagus *oes.*, lateral cervical papilla *l.p.*
- B. Bursa of male, lateral view: *g.c.*, genital cone; *sp.*, spicules.
- C. Bursa showing division of dorsal ray.
- D. Base of mouth capsule showing chitinous folds of the wall of the capsule guarding the oesophageal orifice.

The dorsal ray is short and thick and bifurcates about halfway along its length to form two stout rays, which are again split into two subdivisions as they reach the edge of the bursal membrane. The externo-dorsal rays leave the dorsal ray from about the middle of the thick undivided portion. The ventral rays are fairly well developed and are united to their tips. All the lateral rays, middle and posterior, run to the bursal edge almost side by side, but the anterior ray, which has a thickness almost equal to the two central rays combined, takes a separate course, ending about one-third of the distance from the midlateral to the ventral rays. (Collected by J. J. Simpson, Esq.)

Family STRONGYLIDÆ.

Subfamily CYLICOSTOMINÆ.

Genus CYLINDROPHARYNX, gen. n.

Species BREVICAUDA, sp. n. (Type sp.)

Host: Zebra. Locality: British East Africa.

The Zebra is the subject of a considerable number of parasites that occur normally in the Horse, but in addition it appears to have found a few peculiar to itself. While examining a number of Cylicostominae cleared in glycerine, I noticed a number of specimens that appeared to have an abnormally deep buccal capsule. The shape of this capsule struck me at once as of generic value, and on further search I was soon able to distinguish in the material two distinct species showing this special character.

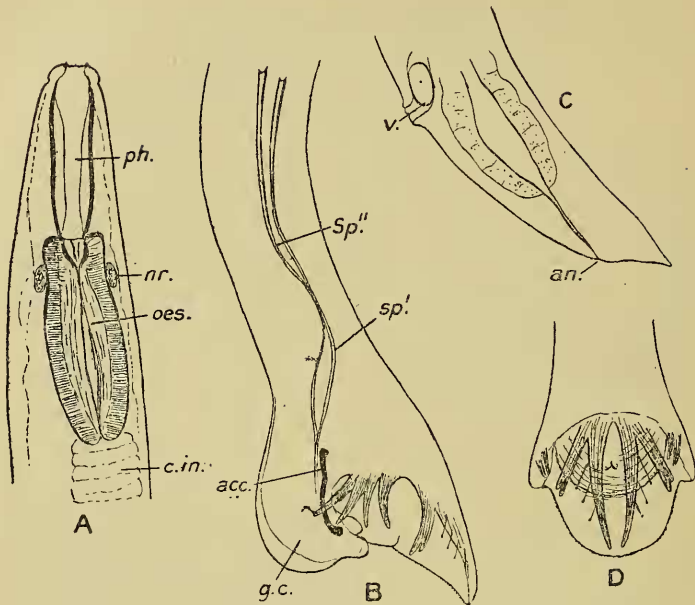
To the naked eye appearances the species of this genus resemble exactly those of *Cylicostomum*. The mouth is surrounded by a collar bearing a double corona radiata. In *C. brevicauda*, the type species, the buccal capsule is cylindrical, and has a thick chitinous wall measuring 0.4 mm. in depth and 0.1 mm. in transverse diameter. The œsophagus is exceedingly short and fleshy, measuring 0.46 mm. in length and 0.18 mm. in greatest diameter. The nerve-ring surrounds the œsophagus immediately behind its union with the buccal capsule (text-fig. 141, A, p. 552). In the female, the posterior end tapers very quickly from a diameter of 0.25 mm. at the level of the vulva to a pencil-like point. The vulva opens at 0.7 mm., the anus at 0.18 mm. from the extremity (text-fig. 141, C). In the male the bursa shows a characteristic disposition of the rays. The posterior ray is split to its base into two portions, and each of these is again split as far into an internal and external ray. The external ray is bifurcated as it reaches the edge of the bursal membrane (text-fig. 141, D). The genital cone is very large and protuberant. The spicules are long and filiform, measuring 1 mm. in length. There is a stout thick uneven accessory piece 0.2 mm. in length (text-fig. 141, B). The edge of the bursal membrane is finely serrated as in the genus *Triodontophorus*.

CYLINDROPHARYNX LONGICAUDA, sp. n.

Host: Zebra. Locality: British East Africa.

This species closely resembles *C. brevicauda*, but the buccal capsule is smaller, measuring only 0.23×0.07 mm. The œsophagus is more slender, measuring 0.42×0.12 mm. (text-fig. 142, A). In the female the tail is long and pointed. The vulva is situated much farther forward in this species, opening at 1.55 mm., whilst the anus opens 0.32 mm. from the posterior extremity (text-fig. 142, D). In the male the spicules are shorter, 0.7 mm. The accessory piece is less developed and shorter, 0.13 mm. The genital cone is more globular (text-fig. 142, B). The rays differ more particularly in that the external branch of the posterior is undivided (text-fig. 142, C). (Collected by Dr. J. T. C. Johnson.)

Text-fig. 141.

*Cyndropharynx brevicuda.*

- A. Anterior extremity showing deep cylindrical pharynx (*ph.*) and short muscular oesophagus (*oes.*), nerve-ring (*nr.*), and chyle intestine (*c.in.*).
 B. Bursa of male showing the long spicules (*sp.*) and well-developed accessory piece (*acc.*). The extero-dorsal ray is bifurcated at its tip. There is a large protruding genital cone (*g.c.*).
 C. Posterior extremity of female showing relationship of vulva (*v.*) and anus (*an.*) to tip of tail.
 D. Dorsal rays of bursa as seen from ventral surface; the edge of the bursa is serrated.

Subfamily STRONGYLINÆ.

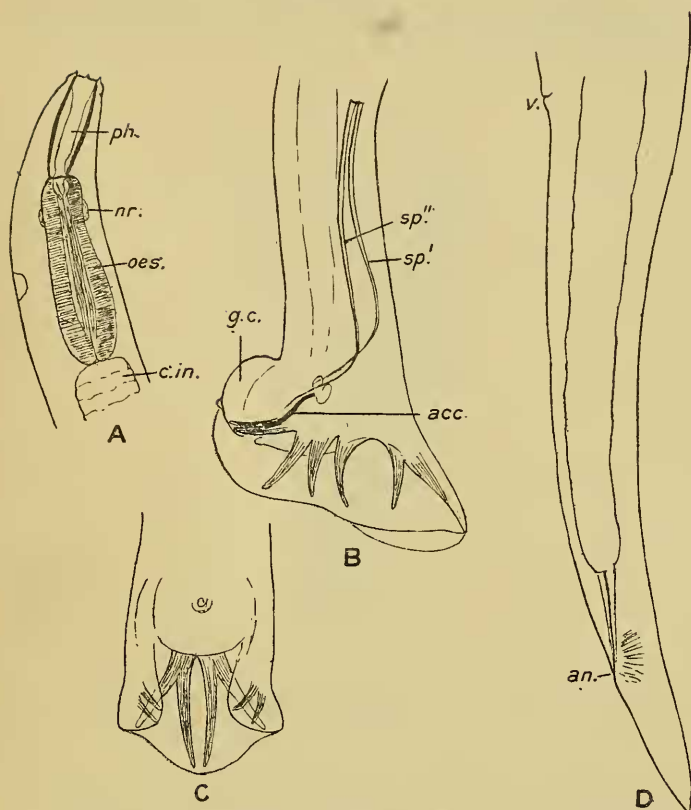
Genus TRACHYPHARYNX, gen. n.

Species NIGERLÆ, sp. n. (Type sp.)

Host: a large rodent. Locality: Nigeria.

Among the above specimens were a few shorter and more stumpy forms that on microscopical examination proved to belong to quite a different family. The specimens were few in number and badly preserved. The diagnosis is based upon the anterior end of the body, mainly because in both sexes the posterior end was obscured and embedded in a thick brown prostatic secretion. The males measure 11 mm. in length and the females 15 mm. in length, and 0.46 mm. in breadth. They taper a little at either end.

Text-fig. 142.

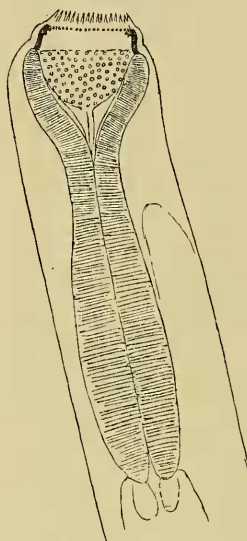
*Cylindropharynx longicauda.*

Explanation of individual figures as in text-fig. 141.

The oral aperture is quite terminal, and is surrounded by a well developed corona radiata highly reminiscent of that found in the species *Strongylus equinus*. The number of leaves in the external crown could not be determined exactly. The internal crown was distinctly visible as a series of comma-like projections, apparently corresponding in number to those of the external crown. The oral capsule is a wide pear-shaped cavity, the anterior third of which is surrounded by a thick wall of cuticle, the posterior two-thirds being almost entirely replaced by a layer of oesophageal musculature, which is however covered by a thin layer of cuticle bearing a large number of round cuticular knobs that project into the buccal cavity. The oesophagus measures 1.25 mm. from the base of the cuticular portion of the buccal capsule to its termination in the chyle intestine. Where

the œsophageal musculature supports and encloses the buccal cavity the muscular tissue is only 0·006 mm. in thickness, but in the posterior third the œsophageal musculature attains a thickness of 0·13 mm.

Text-fig. 143.



Trachypharynx nigeriæ.

Anterior extremity showing buccal capsule.

The females were full of eggs, and although the details of the posterior end of the body could not be made out exactly, the vulva appeared to be situated a short distance in front of the anus, which in turn was situated almost at the posterior end of the body. (Collected by J. J. Simpson, Esq.)

Family SPIROPTERIDÆ.

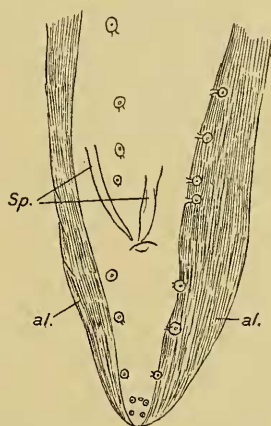
SPIROPTERA UGANDA, sp. n.

Host: Monkey. Locality: Uganda.

In the intestine of a Monkey a fragment of a male worm was found. The anterior portion, having been cut off in the process of opening the gut, was unfortunately lost. The essential points are, however, shown in text-fig. 144, which illustrates the posterior end, showing the papillæ and other specific characters. The papillæ are large, and arranged as four pairs of pedunculated preanals and five pairs of postanals, three of these being pedun-

culated, the terminal two pairs being sessile. On either side, the cuticle is expanded to form an alar ledge about 0.2 mm. in breadth. The expansions are marked on the ventral aspect by a longitudinal

Text-fig. 144.

*Spiroptera uganda.*

Posterior extremity of male: *al.*, alæ; *sp.*, spicules.

striation similar to that commonly found in other species of the genus *Spiroptera*. The spicules are remarkably short and almost equal, measuring 0.2 and 0.3 mm. in length respectively.

ADDENDUM.

COBBOLDINA nom. nov.

* for *Cobboldia* Leiper 1910, preocc.

In my memoir on the "Entozoa of the Hippopotamus" published in the Proceedings of the Zoological Society for 1910, at page 235, I described and figured a new genus *Cobboldia* having as type *Cobboldia vivipara*, sp. n.

Mr. Hassall and Dr. Schouteden have kindly drawn my attention to the fact that *Cobboldia* has been used already for a genus of Insects and is therefore not available. I propose to replace *Cobboldia* Leiper 1910, by the new generic name *Cobboldina*.

R. T. LEIPER, D.Sc., F.Z.S.

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